a) Trp-R1-X7-R1-R1-R2-X-Phe-Phe-Tyr-X-Thr-Glu-X8-9-R3-R3-Arg-R4-X2-Trp

b) X3-Arg-X2-Pro-Lys-X3

c) X-Arg-X-Ile-X

d) X4-Phe-X3-Asp-X4-Tyr-Asp-X2

e) Tyr-X4-Gly-X2-Gln-Gly-X3-Ser-X8

f) X6-Asp-Asp-X-Leu-X3

wherein R1 is Leu or Ile; R2 is Gln or Arg; R3 is Phe or Tyr; R4 is Lys or His, and Xn represents the number n of consecutive unspecified amino acids;

and wherein the protein has telomerase catalytic activity when complexed with a telomerase RNA component.

120. The polynucleotide of claim 119, encoding a protein that comprises the structure Trp-Leu-X-Tyr-X2-h-h-X-h-h-X-p-Phe-Phe-Tyr-X-Thr-Glu-X-p-X3-p-X3-Tyr-X-Arg-Lys-X2-Trp; wherein h is a hydrophobic amino acid selected from Ala, Leu, Ile, Val, Pro, Phe, Trp, and Met; and p is a polar amino acid selected from Gly, Ser, Thr, Tyr, Cys, Asn and Gln.

121. The polynucleotide of claim 119, where structure a) further comprises Arg-Lys-X2-Trp-X2-Leu.

122. The polynucleotide of claim 119, where structure b) comprises h-Arg-h-X-Pro-Lys, wherein h is a hydrophobic amino acid selected from Ala, Leu, Ile, Val, Pro, Phe, Trp, and Met.

123. The polynucleotide of claim 119, where structure c) comprises Arg-X-Ile-Pro-Lys.

124. The polynucleotide of claim 119, where structure e) comprises Gly-Ile-Pro-Gln-Gly-Ser.

125. The polynucleotide of claim 119, where structure f) comprises Leu-Leu-Leu-Arg-Leu-X-Asp-Asp-Phe-Leu.

126. The polynucleotide of claim 119, encoding at least 10 consecutive amino acids of SEQ. ID NO:123.

127. A method for increasing proliferative capacity of a cell of a vertebrate species, comprising expressing the polynucleotide of claim 119 in the cell.--

REMARKS

With entry of this amendment, the previously pending claims 105-118 have been canceled without prejudice, and new claims 119-127 have been added. Applicants respectfully request entry and examination of the new claims in view of the following remarks.

Support for new claims 119-127 is replete in the specification. For example, claims 119-123 has support, e.g., at page 25, line 9 to page 27, line 2; and page 42, line 7 to page 43, line 14. Support for claims 124-125 is found in the specification, e.g., Figure 55. Support for claim 126 is present in the specification, e.g., at page 14, lines 13-15; and Figure 53. Claim 127 has support, e.g., in the originally filed claim 44.

In response to the Restriction Requirement dated September 26, 2000, Applicants have previously elected Group 11 claims that are directed to human telomerase RT nucleic acids and methods of detecting such nucleic acids. Applicants note that claim 119 and its dependents read not only on telomerase reverse transcriptase from human, but also on telomerase reverse transcriptase from other species and variants. Therefore, upon